LUXMAN

SQ202

SERVICE MANUAL

The SQ202 is constituted by such circuits as equalizer, microphone amplifier, intermediate amplifier, tone control, filter, meter, power source and main amplifier etc. Almost all of these circuits are attached to the PCB's, and for easy understanding each PCB is explained as follows:

PB 931

This is the circuit to equalize the input signals from phono 1 and phono 2 according to RIAA response. Composition is of 3-stage NF type with NPN transistor 2SC1000. Usually in case of 2 channels at phono input the selection is made by switch under one equalizer amplifier, while on this model independent amplifiers are provided separately for phono 1 and phono 2 in order to evade various inconveniences which take place at the time of selection of switch - such as inductance noise, shock noise and adverse effects on tonal quality caused by shield wire, and the total 4 circuits for right and left channels are incorporated.

PB 933

This is an amplifier of flat response exclusively for microphone. Composition is made by 4 NPN transistor 2SC1000 (2 each for right and left channel, Q1Q3, Q2Q4). The input jacks (J1 J2) and mic. level setters (VR7A and VR7B) are directly attached to this board. The mic. signals fed through these jacks can be mixed for reproduction with these through other input channels such as phono, aux etc.

PB 932a PB 932b

These 2 PCB's are assembled provided with the switches (S1 S5) for selection of input sources (phono 1, phono 2, aux 1, aux 2, aux 3) and buffer for aux (emittor-follower circuits Q17 Q18).

PB 934

The 3-stage NF type intermediate amplifier composed by 2SC1000 (Q19 Q21 Q23 and Q20 Q22 Q24), and the emittor-follower which plays the role of buffer in case the attenuator is switched on (Q25 Q26), are assembled and connected to the filter circuit board PB936 through the connector. When the attenuator is switched on the signals go through only the emittor-follower bypassing the intermediate amplifier, while when switched off the emittor-follower remains idle.

PB 935

On this PCB assembled are the tone control circuit and the ripple filter circuit for the mains source in the pre-amplifier section. Tone control function is given by 2 transistor per channel (Q27 Q29, Q28 Q30) on the signals taken out at low impedance from the intermediate amplifier or emittor-follower on PB 934.

Toiloring is made under LUX's exclusive circuit composition. The variation of tonal quality is made at bass range by VR3 and treble by VR4. The turn-over and roll-off frequencies can be selected among 150Hz, 300Hz and 600Hz at bass and 1.5kHz, 3kHz and 6kHz at treble by the switches (S12 and S13) fixed to this board.

When both of switches (S12 S13) are at the "defeat" position the signals are shut out at the tone control circuit and fed direct to the following stages. The ripple filter circuit composed by Q59 which causes smoothing effect on the DC voltage from D1 equivalent to several thousand MF, and yet has the nature of quick start provides the power sources to those stages at pre-amplifier section.

PB 936a PB 936b

The filter circuit, loudness circuit and attenuator circuit are assembled on these 2 boards together with the on/off switches for these circuits. The filter circuit is of NF type with sharp response 12 dB/oct. An individual amplifier is arranged for low cut filter 30Hz (Q33 Q34) 80Hz (Q31 Q32) and high cut filter 5kHz (Q35 Q36) 9kHz (Q37 Q38), and total 8 amplifiers are incorporated for right and left channels. These filter circuits do not function at the flat position just like the tone controls and intermediate amplifier.

PB 938

The circuit ingredients (D11, D12, D13, D14 etc.) to drive VU meter and step-up amplifier (Q39 Q40) which boosts the signals from pre out to such level as to drive the meter. The interchangeability among 3 positions is available on the meter indication by the switches S22A S22B at the rear panel, namely, indication on PRE OUT level (VU), on full power (0 dB) at power amplifier section, and on the same under attenuation (−14 dB).

PB 937A

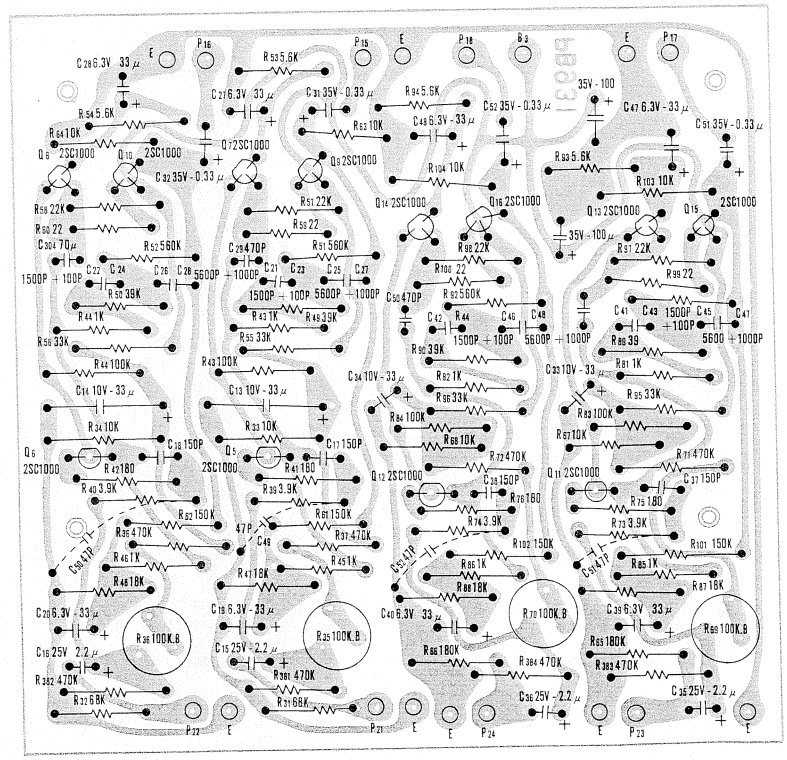
This board is equipped with the smoothing capacitors for the bridge rectifier circuits (D3 D4 D5 D6) composed by the main amplifier power supply diode V05, the full wave rectifier circuit (D1) by pre-amplifier circuit diode IS1850,

and full wave rectifier (D2) by 2 illumination power source diodes IS1850. The positive side of the coupling connector with the main amplifier board PB930A is also attached.

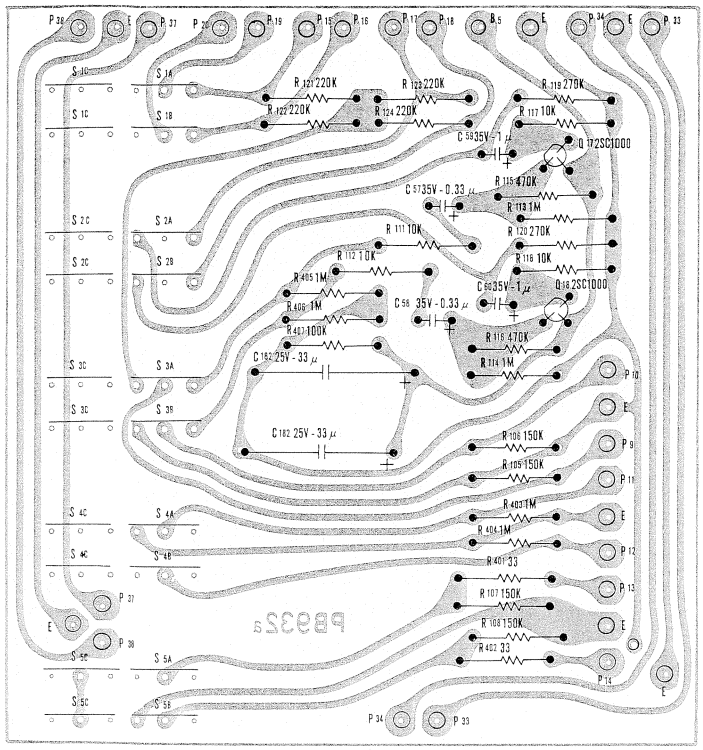
PB930A

The main amplifier is composed by the power transistors 2SD218 Q55 Q56 (NPN) 2SA649 Q57 Q58 (PNP) fixed to the heat-sink and the various components fixed on the PB930. The circuit configuration is direct coupled 2-stage differential driving pure complementary system. This PB930 is composed by the 1st stage differential driving amplifier XA495C Q43Q45 Q44Q46, the 2nd stage 2SC959 Q47Q49 Q48Q50, driver stage Q51Q52 2SC959 Q53Q54 2SA606, and resistors and capacitors, which is connected to the power source board PB937A through 6P connector. The heat-sink is fixed direct to the rear panel.

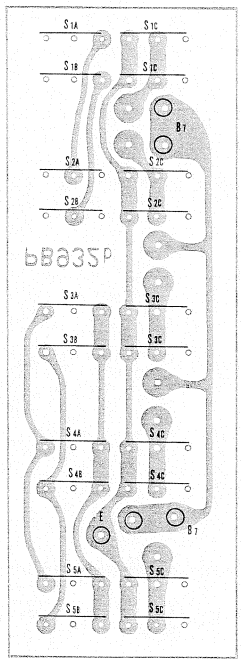
PB931 BOARD



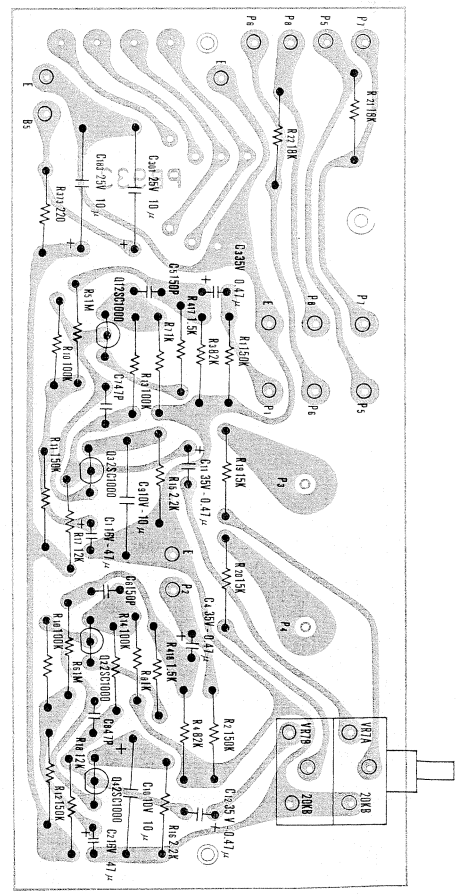
PB932a BOARD



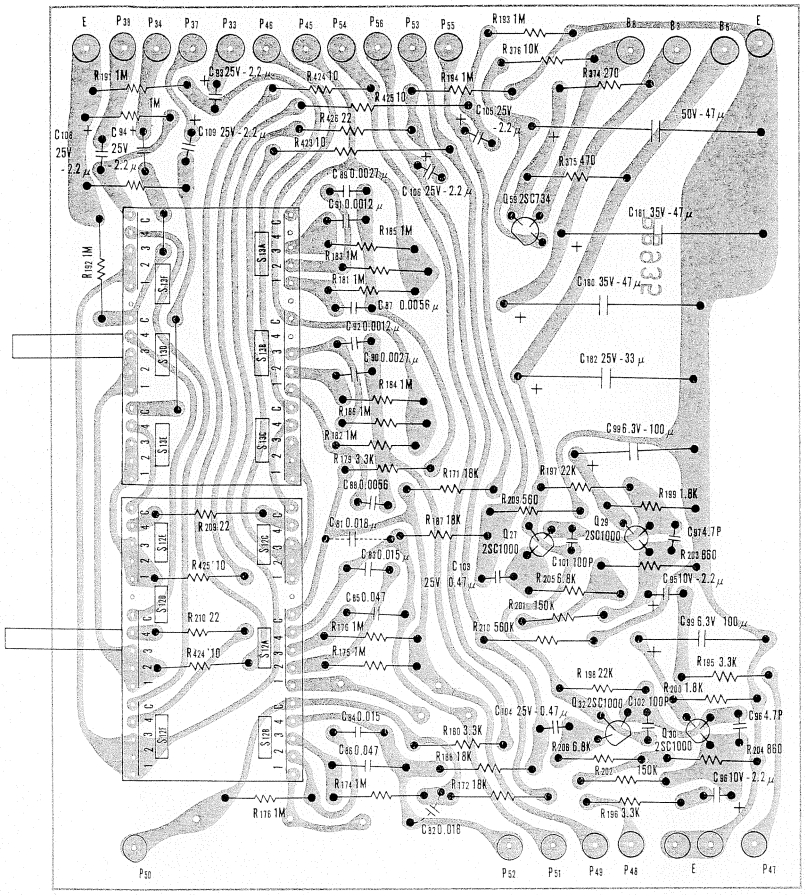
PB932b BOARD



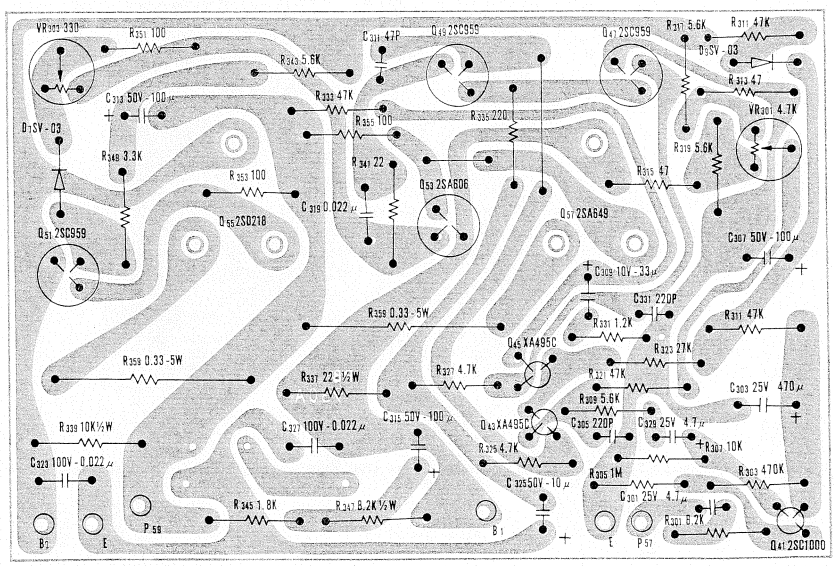
PB933 BOARD



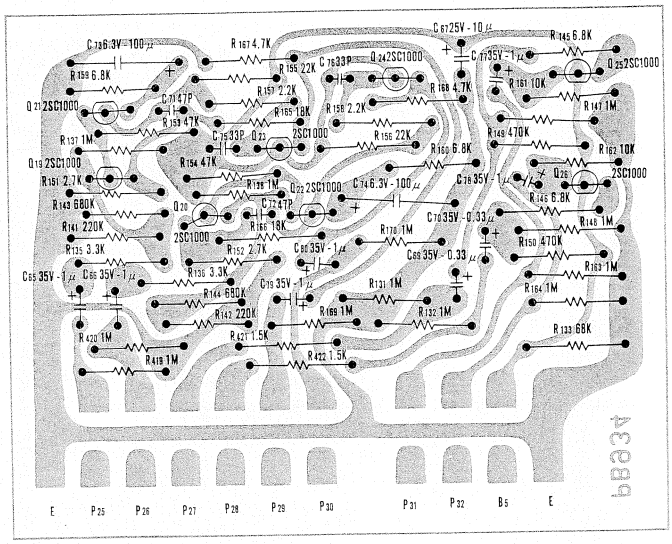
PB935 BOARD



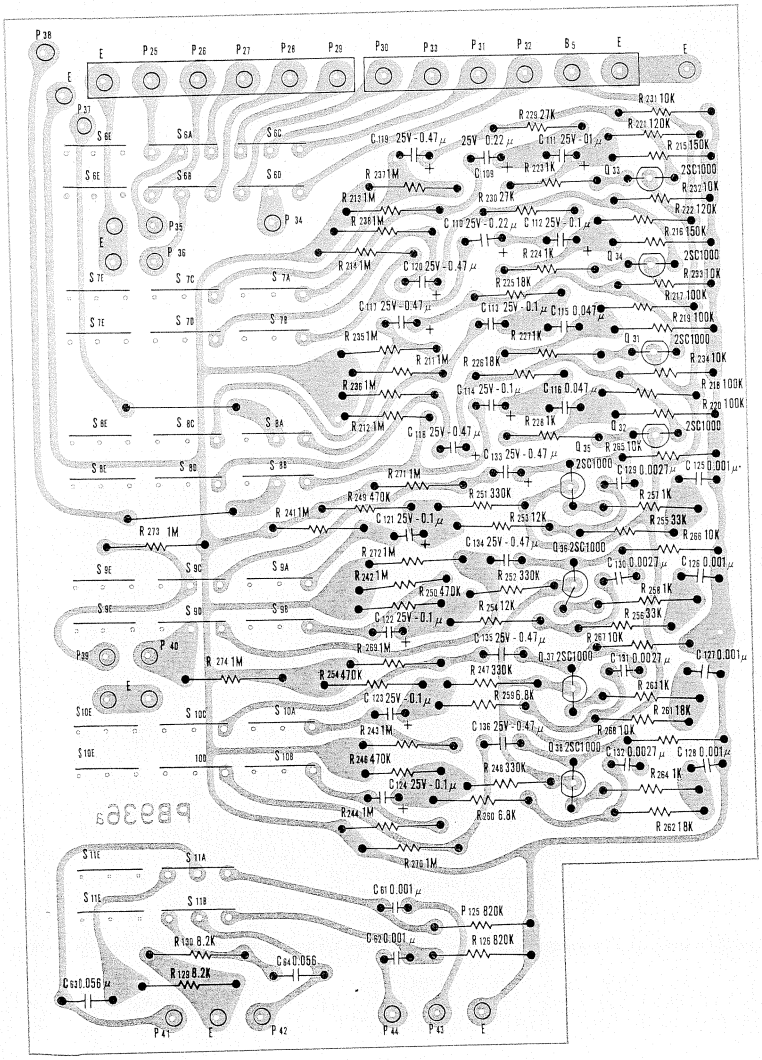
PB930A BOARD



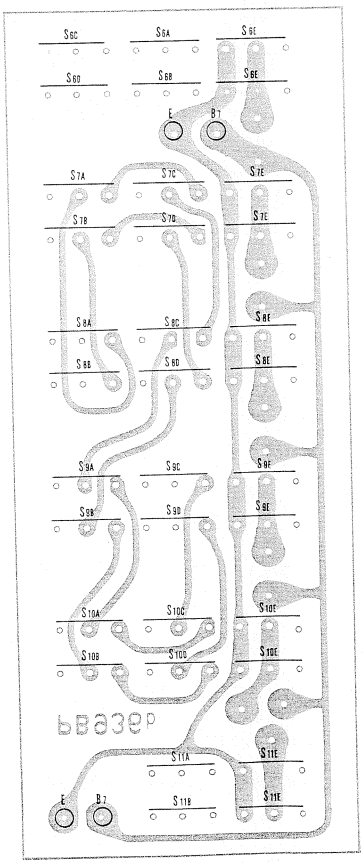
PB934 BOARD



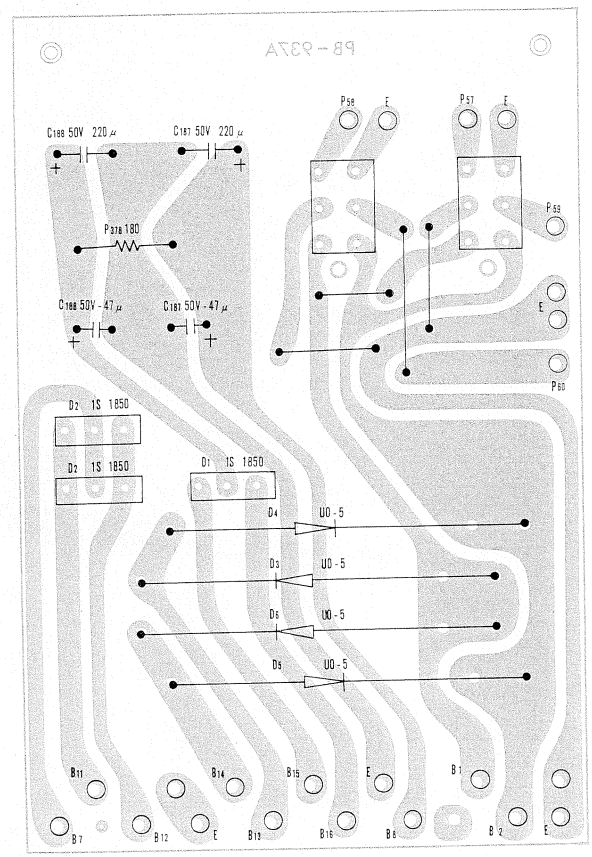
PB936a BOARD



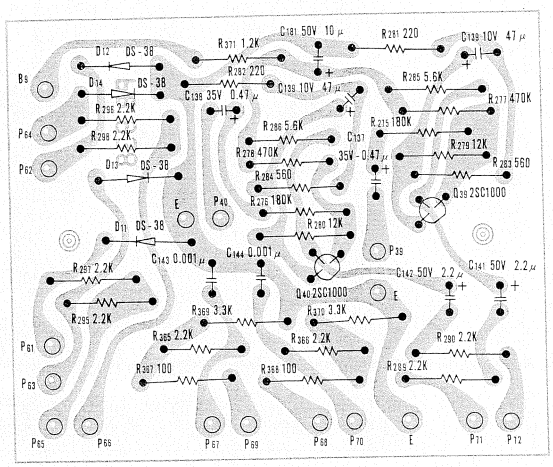
PB936b BOARD



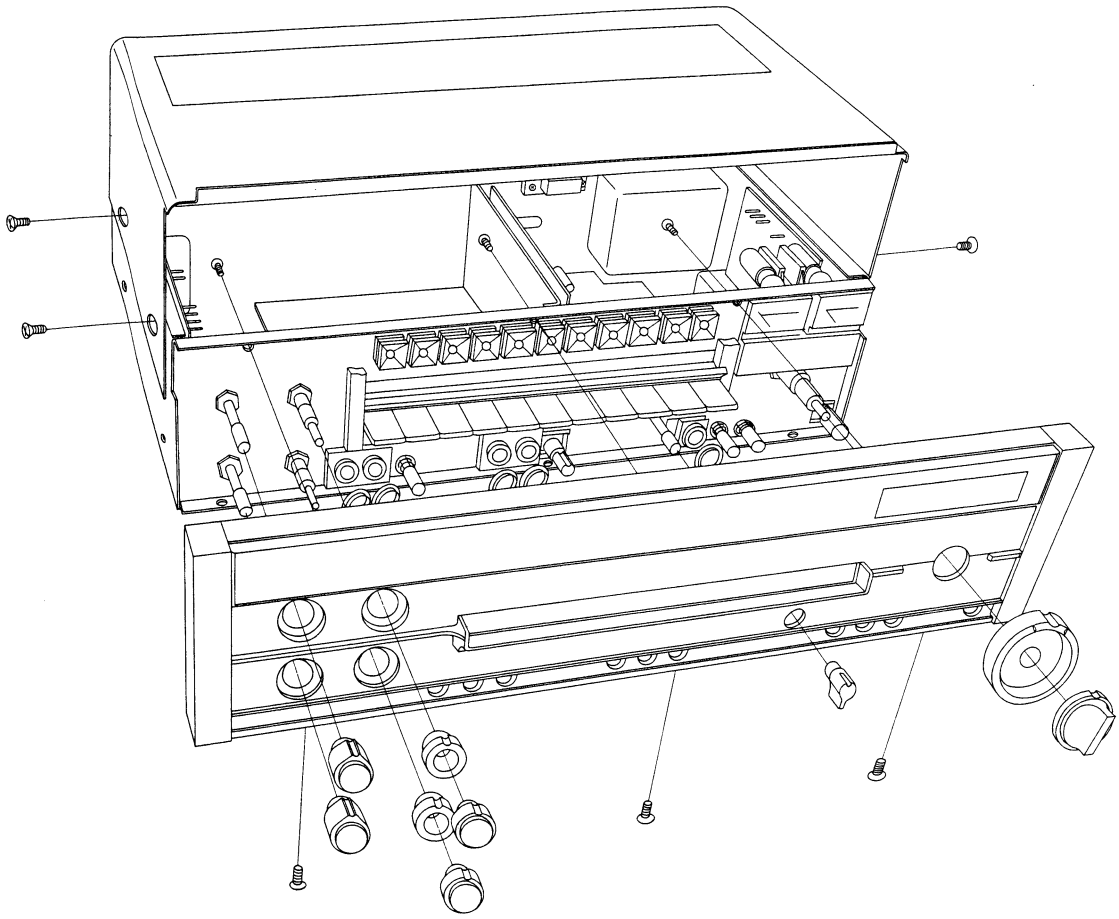
PB937A BOARD



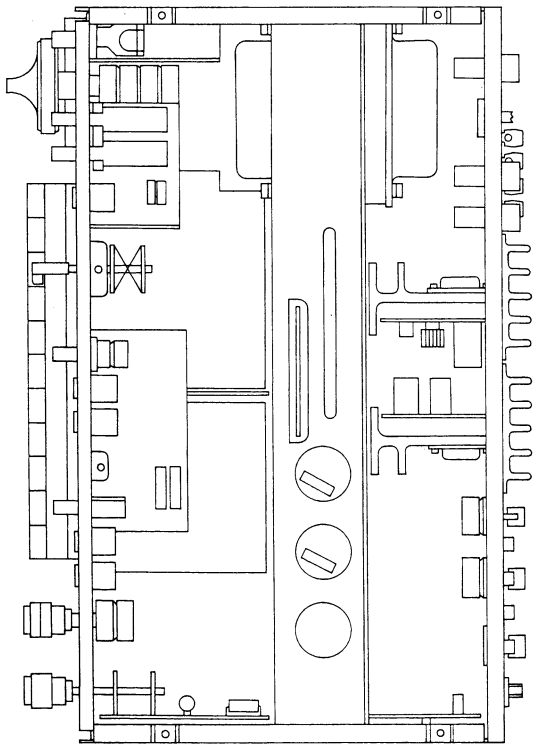
PB938 BOARD



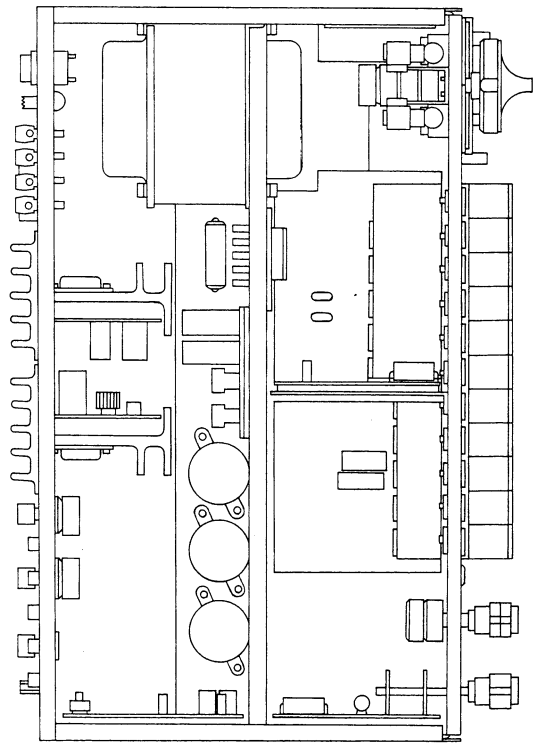
CABINET DISASSEMBLY



CHASSIS LAYOUT (TOP)



CHASSIS LAYOUT (BOTTOM)



MECHANICAL

1	Sub panel	1
2	Side plate	1 pair
3	Base plate	1
4	Center flame	1
5	Back panel	1
6	Meter lamp holder	1
7	Power switch shield metal	1
8	Fixing metal for microphone jack	2
9	Speaker switch shield metal	1
10	Light shield metal for meter	1
11	Fixing metal for side board --- wood	1 pair
12	Push button rail	1
13	Push button holder	1
14	Bonnet	1
15	Power board holder	1
16	Indicator lamp holder	11
17	Shield bracket	1
18	Swan base socket	4
19	PCD mounting stand	4
20	Fixing metal for push button	1
21	Jack short plate	1
22	Fixing metal for phone jack	1
23	AM frontend fixing stand	2
24	Rubber for meter (black)	1
25	Rubber for shield bracket	1
26	Soft tape	1
27	Fixing plate for power board	1
28	Washer for microphone jack	2
29	Fixing metal for power coard	1

DESIGNING/OUTER APPEARANCE

30	Front panel	1
31	Side board --- wood	1 pair
32	Outer axis volume knob, mold	1
33	Volume knob, mold	1
34	Smoked acrylic plate	1
35	Outer axis tone control knob, mold	2
36	Inner axis tone control knob, mold	2
37	Cap for tone control knob	4
38	Pipe for tone control knob	4
39	Slope switch knob, mold	2
40	Mode switch knob	1
41	Push button for selector switch	11
42	Push button for speak switch	3
43	Escutcheon for push button (A)	1
44	" " (B)	1
45	" " (C)	1
46	Level set knob	1
47	Push button for power switch	1
48	Panel clamping stand	3
49	Black color paper for knob	1
50	Styro-form	2
51	Jack Sleeve, rubber	5
52	Rubber base	4
53	Metal stand	4
54	Metal for volume knob	1

OVERALL COMPONENTS

55	Power transeformer	P-1682E(V)	1
56	Power switch	UEH 12BF	1
57	Speaker switch	2PS-13	1
58	Stereo phone jack	SJ7702	3
59	Variable resistor	100KΩ Bct, 100KΩ A, Cct 2-gang dual type	1
60	"	100KΩ B 2-gang friction type	1
61	"	50KΩ B 2-gang friction type	1
62	VU meter		2
63	Mode selector switch	F445	1
64	Indicator lamp	12V 1.5W	5
65	"	12V 75mA	11
66	Block electrolytic condenser	10,000μ f 16wv	1
67	"	3,300μ f 63wv	2
68	Terminal board base	15P	1
69	Cement film resistor	5KΩ 5w	2
70	Fixed resistor	680Ω 1W ±5%	2
71	"	15KΩ 1/4w ±10%	2
72	Bushing --- cord	Bu 4801	7
73	Voltage selector socket	9208 9209	1 pair
74	Output terminal board	4P square push terminal	2
75	Input pin jack terminal board	10P non short type	1
76	Input pin jack terminal board	8P	1
77	Variable resistor	100KΩ B type 24φ 2-gang click	2
78	Small selector switch	4 way 3 contact	1
79	Slide switch	2 way 3 contact	1
80	"	2 way 2 contact	1
81	Tape connector	DIN	1
82	GND terminals	VB2 VN2 VW2	1 set
83	AC outlet	SE6407	3
84	Fuse holder	S-N 2052	3
85	Fuse	5A	4
86	AC input connector	S-I 6405	1
87	Power cord		1
88	Speaker cord		6m
89	Selector disc		1
90	GND lug	3φ B-5	3
91	GND lug	4φ B-6	1
92	Wires	UL, AWG22 AWG18	
93	Short pin plug	US type	4
94	Cord clamper		4
95	Fixed resistor	100KΩ 1/4w	2
96	"	47KΩ 1/4w	2
97	Oil tubular condenser	0.047μ F 450V AC	2
98	Fixed resistor	150KΩ 1/4w	4
99	"	33K	2
100	"	12K	2
101	Electrolytic condenser	1μ F 50v non-polar	2
102	Ceramic condenser	0.04μ F 50V	2
103	Fixed resistor	10Ω 1w ±5%	2
104	Ceramic condenser	0.006μ F 50V	1
105	"	47pF 50V ±10%	4
106	Film condenser	1000pF 50V ±10%	4

PB 931

107	Printed circuit board	PB931	1
108	Transistor	2SC1000	12
109	Semi-fixed resistor	100KΩ B type 10φ	4
110	Electrolytic condenser	33μ F 10v	10
111	"	100μ F 35V	2
112	"	33μ F 10V	2
113	Solid tantalum condenser	2.2μ F 25V ±20%	4
114	"	0.33μ F 35V +40% −20%	4
115	Polyester film condenser	0.0056μ F 50V ±10%	4
116	"	0.0015μ F 50V ±10%	4
117	Styrol condenser	470pF 50V	4
118	Ceramic condenser	150pF 50V	4
119	"	100pF 50V	4
120	Fixed resistor	22Ω 1/4W ±10%	4
121	"	560KΩ 1/4W ±10%	4
122	"	470KΩ "	8
123	"	180KΩ "	2
124	"	150KΩ "	4
125	"	68KΩ "	2
126	"	39KΩ "	4
127	"	33KΩ "	4
128	"	22KΩ "	4
129	"	18KΩ "	4
130	"	10KΩ "	8
131	"	5.6KΩ "	4
132	"	3.9KΩ "	4
133	"	1KΩ "	4
134	"	180KΩ "	4
135	Low noise fixed resistor	100KΩ 1/4W ±10%	4
136	"	1KΩ "	4
137	Push button switch	5 button 4 way coupled shorting type	1

PB 932a PB 932b

138	Printed circuit board	PB932a	1
139	"	PB932b	1
140	Transistor	2SC 1000	2
141	Electrolytic condenser	33μ F 25V	2
142	Solid tantalum condenser	1μ F 35V	2
143	"	0.33μ F 35V	2
144	Fixed resistor	1MΩ 1/4W ±10%	6
145	"	470KΩ "	2
146	"	220KΩ "	4
147	"	150KΩ "	4
148	"	33Ω "	2
149	"	100KΩ "	1
150	"	10KΩ "	4
151	"	270KΩ "	2
152	"		

PB 933

153	Printed circuit board	PB933	1
154	Jack with switch	Microphone, mono	2
155	Volume	16φ 20K～B coupled	1
156	Push button switch	Monitor, 2 way	1
157	Transistor	2SC 1000	4
158	Electrolytic condenser	10μ F 25V	2
159	"	10μ F 10V	2
160	"	4.7μ F 10V	2
161	Solid tantalum condenser	0.45μ F 35V	4
162	Ceramic condenser	150pF 50V	2
163	"	47pF 50V	2
164	Fixed resistor	150KΩ 1/4 ±10%	4
165	"	1MΩ "	2
166	"	100KΩ "	2
167	"	68KΩ "	4
168	"	18KΩ "	2
169	"	15KΩ "	2
170	"	12KΩ "	2
171	"	2.2KΩ "	2
172	"	1.5KΩ "	2
173	"	220Ω "	1
174	"	82Ω "	2
175	Low noise fixed resistor	100KΩ 1/4W ±10%	2
176	"	1KΩ "	2
177	Lug grommet	I type	2
178	Push button switch	6 button 6 way (5) 4 way (1)	1
179	PB connector	6P	2 pairs

PB934 PB936a PB936b

180	Printed circuit board	PB934	1
181	"	PB936a	1
182	"	PB936b	1
183	Transistor	2SC1000	16
184	Ceramic condenser	0.001μ F 50v ±10%	2
185	"	0.0027μ F "	4
186	"	0.001μ F "	4
187	Aluminum solid electrolytic condenser	0.47μ F 25V ±20%	8
188	"	0.33μ F "	2
189	"	0.22μ F "	2
190	"	0.1 μ F "	8
191	Solid tantalum condenser	1 μ F 35V ±20%	6
192	Polyester film condenser	0.0056μF	2
193	"	0.047μ F	2
194	Ceramic condenser	47pF 50V	2
195	"	33pF 50V	2
196	Electrolytic condenser	100μF 6.3V	2
197	"	10μF 25V	1
198	Fixed resistor	1MΩ 1/4W ±10%	28
199	"	470KΩ "	6
200	"	270KΩ "	2
201	"	330KΩ "	4
202	"	100KΩ "	4
203	"	560KΩ "	2
204	"	150KΩ "	2
205	"	120KΩ "	2
206	"	47KΩ "	2
207	"	33KΩ "	2
208	"	27KΩ "	2
209	"	22KΩ "	2
210	"	18KΩ "	6
211	"	12KΩ "	2

212	"	10KΩ	"	10
213	"	8.2KΩ	"	2
214	"	6.8KΩ	"	6
215	"	2.7KΩ	"	2
216	"	4.7KΩ	"	2
217	"	3.3KΩ	"	2
218	"	2.2KΩ	"	2
219	"	1.5KΩ	"	2
220	"	1KΩ	"	8
221	"	820KΩ	"	2
222	"	68KΩ	"	1
223	"	15KΩ	"	2
224	"	680KΩ	"	2
225	"	220KΩ	"	2

PB935

226	Printed circuit board	PB935	1
227	Selector switch	2 stage 6 way 4 contact	2
228	Transistor	2SC1000	4
229	"	2SC 734Y	1
230	Electrolytic condenser	47μF 50V	1
231	"	33μF 25V	1
232	"	47μF 35V	2
233	"	100μF 6.3V	2
234	Solid tantalum condenser	2.2μF 25V	8
235	"	0.47μF 35V	2
236	Film condenser	0.0012μF 50V ±10%	2
237	"	0.00 27μF "	2
238	"	0.0056μF "	2
239	"	0.015μF "	2
240	Polyester film condenser	0.018μF "	2
241	"	0.047μF "	2
242	Fixed resistor	470Ω 1/4W ±10%	1
243	"	270Ω "	1
244	"	1MΩ "	16
245	"	560KΩ "	2
246	"	150KΩ "	2
247	"	22KΩ "	2
248	"	18KΩ "	4
249	"	10KΩ "	1
250	"	6.8KΩ "	2
251	"	3.3KΩ "	4
252	"	1.8KΩ "	4
253	"	820Ω "	2
254	"	820KΩ "	2
255	"	22Ω "	2
256	"	15Ω "	2
257	"	10Ω "	4
258	Ceramic condensor	100pF 50V	2
259	"	4.7pF 50V	2
260	Fixed resistor	1MΩ 1/4W ±10%	2
261	"	470KΩ "	2
262	"	47KΩ "	6
263	"	27KΩ "	2
264	"	10KΩ "	2
265	"	5.6KΩ "	8
266	"	4.7KΩ "	4
267	"	3.3KΩ "	2
268	"	1.8KΩ "	2
269	"	1.2KΩ "	2
270	"	470Ω "	2
271	"	220Ω "	2
272	"	100Ω "	6
273	"	47Ω "	4
274	"	22Ω "	2
275	"	8.2Ω "	2
276	"	10KΩ1/2W±5%	2
277	"	8.2KΩ "	2
278	"	22K "	2
279	Square fixed resistor	0.33Ω 5W	4

PB930A

280	Printed circuit board	PB930A	2
281	Heat sink	120mm	2
282	Transistor	VCEO 60V , XA495C	4
283	"	M rank 2SD 218	2
284	"	" 2SA 649	2
285	"	L rank 2SC 959	1
286	"	" 2SA 606	2
287	"	2SC 1000GR	2
288	Varistor	SV - 03	2
289	Power transistor accessory	Mica, Screw, Spring washer	4 pairs
290	Power transistor socket	S2 - 110B	4
291	Semi fixed resistor	4.7KΩ Btype 10φ	2
292	"	330Ω "	2
293	Small radiator	for TD - 5	8
295	Driver transistor pad	"	8
295	Electrolytic condenser	470μF 25V	2
296	"	100μF 50V	6
297	"	33μF 10V	2
298	"	10μF 63V	2
299	Polyester film condenser	0.022μF 100V	4
300	"	0.022μF 50V	2
301	Solid tantalum condenser	4.7μF 25V ±20%	4
302	Ceramic condenser	220pF 100V ±10%	4
303	"	47pF 100V	2
304	"	100pF 100V	2
305	Comb. line connector	Receptacle housing C152304	2
306	"	Direct pin 152307-1	12
307	"	Receptacle socket 61064-1	12

PB937A

308	Printed circuit board	PB937A	1
309	Diode	2.8A - 300V~, U05	4
310	"	1S - 1850	3
311	Electrolytic condenser	220μF 50V	2
312	"	47μF 50V	2
313	Fixed resistor	180Ω 1/4W ±10%	1

PB938

314	Printed circuit board	PB938	1
315	Transistor	2SC 1000GR	2

316	Electrolytic condenser	2.2 μF 50V	2
317	Solid tantalum condenser	0.47 μF 35V	2
318	Silicon diode	DS38B	4
319	Electrolytic condenser	10 μF 50V	1
320	"	47 μF 10V	2
321	Ceramic condenser	0.001 μF 50V	2
322	Fixed resistor	470KΩ 1/4W ±10%	2
323	"	180KΩ "	2
324	"	12KΩ "	2
325	"	5.6KΩ "	2
326	"	3.3KΩ "	2
327	"	2.2KΩ "	8
328	"	1.2KΩ "	1
329	"	560Ω "	2
330	"	220Ω "	2
331	"	100Ω "	2
332	PCB terminal	for PB931	17
333	"	for PB933	19
334	"	for PB935	23
335	"	for PB938	20

SCREWS WASHERS & NUTS

336	outlet mounting	3mm φ 8mm long screw	6
337	"	3mm φ washer	6
338	"	3mm φ square nut	6
339	AC input connector mounting	3mm φ 8mm long screw	2
340	"	3mm φ washer	2
341	"	3mm φ nut	2
342	Speaker terminal board mounting	2mm φ 8mm long screw	8
343	"	2mm φ washer	8
344	"	2mm φ nut	8
345	Meter slide switch mounting	2.6mm φ 4mm long screw	2
346	Pre-main separater slide switch mounting	2.6 mm φ 4mm long screw	2
347	Ventillation plate mounting	3mm φ 6 mm long screw	8
348	Input terminal mounting	3mm φ 8mm long screw	6
349	"	3mm φ washer (spring)	5
350	"	3mm φ washer (inner clip)	1
351	"	3mm φ nut	6
352	DIN connector mounting	3mm φ 6mm long screw	2
353	"	3mm φ washer	2
354	"	3mm φ nut	2
355	GND terminal mounting	3mm φ washer	1
356	"	3mm φ nut	1
357	Side board (wood) mounting - back panel	3mm φ 6mm long screw	4
358	"	3mm φ washer	4
359	Condenser mounting	3mm φ 6mm long screw	6
360	Power board clamp panel mounting	3mm φ 6mm long screw	2
361	Power board clamp metal mounting	3mm φ 6mm long screw	2
362	Power board mounting	3mm φ 6mm long screw	2
363	Voltage selector connector mounting	3mm φ 10mm long screw	2
364	Side board (wood) mounting - center flame	4mm φ 6mm long screw	8
365	Power trans mounting	5mm φ washer	4
366	"	5mm φ nut	4
367	Wire clamp metal mounting	3mm φ 6mm long screw	4
368	15T terminal mounting	3mm φ 8mm long screw	2
369	Power board clamp metal mounting	3mm φ washer	2
370	Side board mounting - sub panel	3mm φ 6 mm long screw	6
371	"	3mm φ washer	6
372	Microphone jack clamp panel mounting	3mm φ 6mm long screw	4
373	Headphone jack clamp panel mounting	3mm φ 6mm long screw	1
374	Monitor switch mounting	2.6mm φ 4mm long screw	2
375	"	2.6mm φ washer	2
376	Speaker switch mounting	2.6mm φ 6mm long screw	2
377	"	2.6mm φ nut	4
378	Power switch mounting	3mm φ 6mm long screw	2
379	"	3mm φ washer	2
380	Meter mounting	2mm φ nut	4
381	"	2mm φ washer	4
382	Light shield metal for meter mounting	2mm φ nut	2
383	Push button switch mounting	2.6mm φ 6mm long screw	4
384	"	2.6mm φ nut	8
385	Push button switch clamp metal mounting	3mm φ 6mm long screw	2
386	Shield bracket mounting	3mm φ 6mm long screw	2
387	"	3mm φ washer	2
388	Meter lamp holder mounting	3mm φ 6mm long screw	1
389	"	3mm φ washer	1
390	GND lug mounting	3mm φ 6mm long screw	1
391	Speaker switch shield metal mounting	3mm φ 6mm long screw	2
392	"	3mm φ washer	2
393	PCB clamp stand mounting	2.6mm φ 6mm long screw	4
394	Equalizer board mounting	2.6mm φ nut	4
395	Power transformer mounting	5mm φ 10mm long screw	2
396	"	5mm φ washer	2
397	"	5mm φ washer (spring)	2
398	"	5mm φ nut	2
399	Meter board clamp stand mounting	3mm φ 6mm long screw	2
400	Meter board mounting	3mm φ nut	2

401	Power switch shield metal mounting	3mm ϕ 6mm long screw	2
402	"	3mm ϕ washer	2
403	Side board (wood) mounting	3mm ϕ 6mm long screw	6
404	Side board (wood) clamp metal mounting	3mm ϕ 6mm long screw (pan head)	2
405	"	3mm ϕ 6mm long screw (cheese head)	2
406	"	3mm ϕ washer	2
407	Smoked acrylic plate mounting	3mm ϕ 8mm long screw	3
408	"	3mm ϕ washer	3
409	Front panel mounting - sub panel	3mm ϕ 6mm long screw (pan head)	3
410	"	3mm ϕ 6mm long screw (cheese head)	3
411	"	3mm ϕ washer	3
412	Push button escutcheon mounting	3mm ϕ 6mm long screw	6
413	"	3mm ϕ washer	6
414	"	2mm ϕ speed nut	5
415	Base plate mounting	3mm ϕ 6mm long screw	6
416	Rubber base mounting	4mm ϕ 8mm long screw	4
417	Bonnet mounting	4mm ϕ 10mm long screw	4
418	"	4mm ϕ washer	4

SPECIFICATIONS

■ Main Amplifier Section

Output	70W/70W RMS (8Ω both channels driven) 80W/80W RMS (8Ω single channel driven) 100W/100W RMS (4Ω single channel driven)
THD	below 0.04% (8Ω, 1KHz) below 0.05% (4Ω, 1KHz)
Intermodulation Distortion	below 0.05% (8Ω 70Hz: 7KHz = 4:1)
Power Band width	5～50,000Hz (within −3dB)
Frequency Response	10～60,000Hz (within −1dB)
Input Sensitivity	700mV (8Ω, 50W) with level control
Input Impedance	about 100KΩ
Cross-Talk	66dB
Residuat Noise	about 1mV
Damping Factor	35 (8Ω) 70(16Ω)
Accesscries	Output indication meter Main-remote speaker selector Headphone jack Mains voltage selector Extra mains outlet

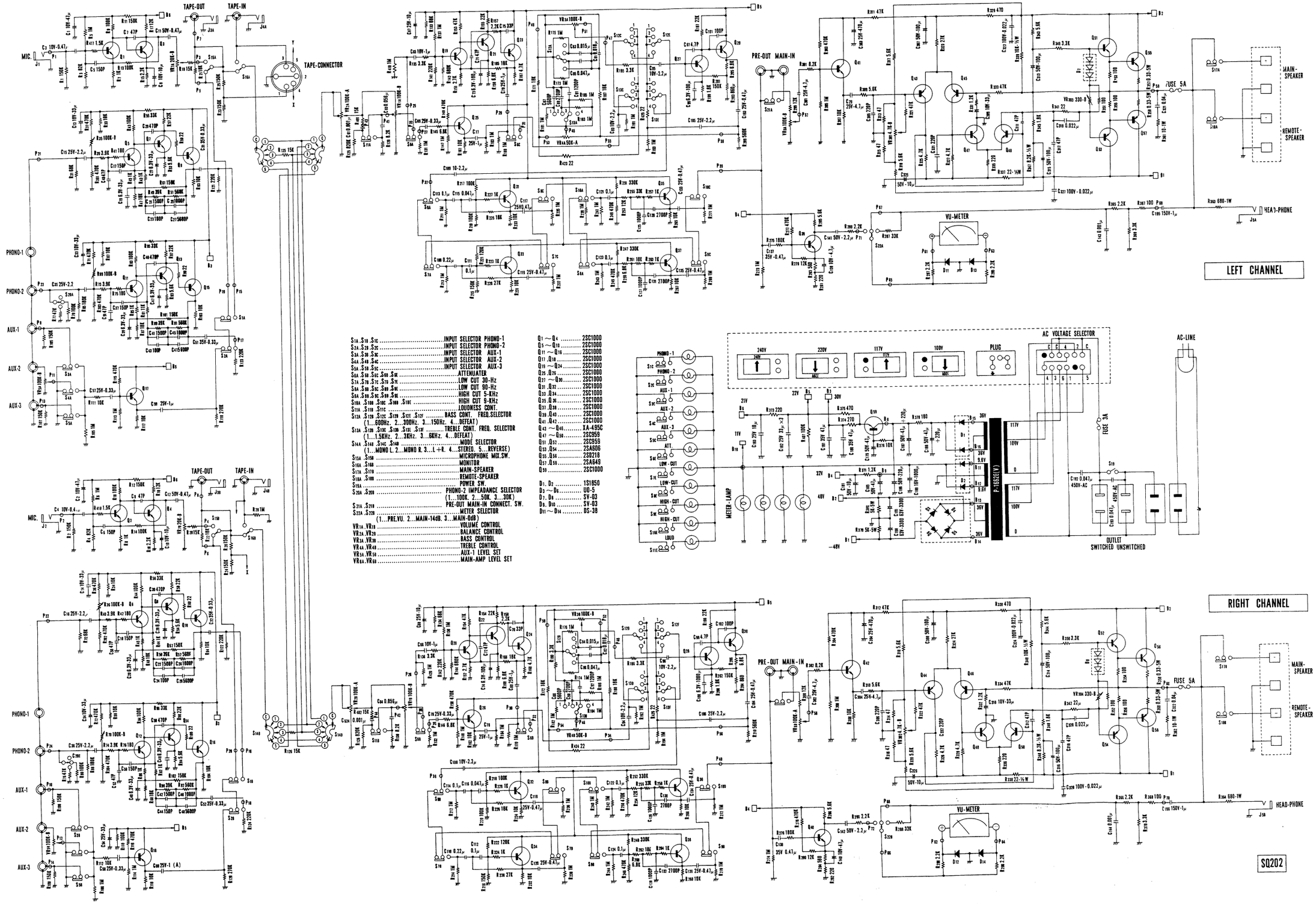
■ Others

Transistors	2SD218 (2) 2SA649 (2) 2SC959 (6) 2SA606 (2) 2SC1000 (43) XA495C (4)
Diode	U05 (4) IS1850 (3) DS38B (4)
Varistor	SV-03 (4)
Power Consumption	270W (8Ω, max. output, both channel driven)
Mains Voltage	100, 117, 220, 240V
Dimensions	480mm (W) X 280mm (D) X 165mm (H)
Weight	12.5 kg

■ Pre-Amplifier Section

Rated Output Voltage	Pre-out: 700mV Tape-out: 110mV
Max. Output Voltage	Approx. 5V
Output Impedance	Pre-out: Approx. 100Ω Tape-out: Approx. 100Ω
Frequency Response	20～70,000Hz (within −1dB)
THD	below 0.05% (AUX-1, 1KHz)
Input Sensitivity Pre-out: 700mV Main Output: 50W, 8Ω)	Phono-1: 2mV Phono-2: 2mV Aux-1: 110mV Aux-2: 110mV (with level controller) Aux-3: 110mV Mic mix: 2.5mV Tape-in: 110mV
Input Impedance	Phono-1: 50KΩ Phono-2: 30K, 50K, 100KΩ selectable Aux-1: 100KΩ Aux-2: 100KΩ Aux-3: 100KΩ Mic mix: 50KΩ
Permissible Input Voltage	Phono-1: 180mV Phono-2: 180mV Aux-1: 5V Aux-2: over 5V Aux-3: 5V
Ham · Noise (S/N Ratio) (Pre Out: 700mV)	Phono-1: 66dB Phono-2: 66dB Aux-1: 80dB Aux-2: 80dB Aux-3: 80dB Mic (mix with Aux-1): 66dB (S/N ratio adjusted under IHF "A" curve) Phono-1: 81dB Phono-2: 81dB Aux-1: 90dB Aux-2: 90dB Aux-3: 90dB Mic (mix with Aux-1): 75dB (Noise voltage VS input) Phono-1: −120dB/V Phono-2: −120dB/V Aux-1: −110dB/V Aux-2: −110dB/V Aux-3: −110dB/V Mic (mix with Aux-1): −118dB/V
Residual Noise	Approx. 25μV
Cross-talk	Phono: 66dB Aux: 71dB
Filter (Cutting slope: −12dB/Oct)	High Cut: 5KHz, 9KHz Low Cut: 30Hz, 80Hz
Loudness Control (Adjustment at −18dB)	50Hz: +8.5dB 10KHz: +7.5dB
Attenuator	−18dB
Accessories	Tape monitor switch and terminals Mode selector Input impedance selector (Phono-2) Input level setter (Aux-2) DIN tape connector Mic jack and level setter

CIRCUIT DIAGRAM



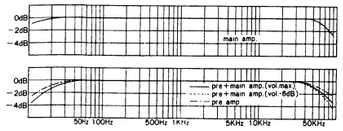
S1A..S1g ..... INPUT SELECTOR PHONO-1
S2A..S2g ..... INPUT SELECTOR PHONO-2
S3A..S3g ..... INPUT SELECTOR AUX-1
S4A..S4g ..... INPUT SELECTOR AUX-2
S5A..S5g ..... INPUT SELECTOR AUX-3
S6A..S6g..S6c..S6d..S6e ..... ATTENUATER
S7A..S7g..S7c..S7d..S7e ..... LOW CUT 30-Hz
S8A..S8g..S8c..S8d..S8e ..... LOW CUT 80-Hz
S9A..S9g..S9c..S9d..S9e ..... HIGH CUT 5-KHz
S10A..S10g..S10c..S10d..S10e ..... HIGH CUT 9-KHz
S11A..S11g..S11c ..... LOUDNESS CONT.
S12A..S12g..S12c..S12g..S12d..S12e..S12f ..... BASS CONT. FREQ.SELECTOR (1...600Hz. 2...300Hz. 3...150Hz. 4...DEFEAT)
S13A..S13g..S13c..S13g..S13d..S13e..S13f ..... TREBLE CONT. FREQ. SELECTOR (1...1.5KHz. 2...3KHz. 3...6KHz. 4...DEFEAT)
S14A..S14g..S14c..S14d ..... MODE SELECTOR (1...MONO L. 2...MONO R. 3...L+R. 4...STEREO. 5...REVERSE)
S15A..S15g ..... MICROPHONE MIX.SW.
S16A..S16g ..... MONITOR
S17A..S17g ..... MAIN-SPEAKER
S18A..S18g ..... REMOTE-SPEAKER
S19A..S19g ..... POWER SW.
S20A..S20g ..... PHONO-2 IMPEADANCE SELECTOR (1...100K. 2...50K. 3...30K)
S21A..S21g ..... PRE-OUT MAIN-IN CONNECT. SW.
S22A..S22g ..... METER SELECTOR (1...PRE.VU. 2...MAIN-14dB. 3...MAIN-0dB)

VR1A..VR1g ..... VOLUME CONTROL
VR2A..VR2g ..... BALANCE CONTROL
VR3A..VR3g ..... BASS CONTROL
VR4A..VR4g ..... TREBLE CONTROL
VR5A..VR5g ..... AUX-1 LEVEL SET
VR6A..VR6g ..... MAIN-AMP LEVEL SET

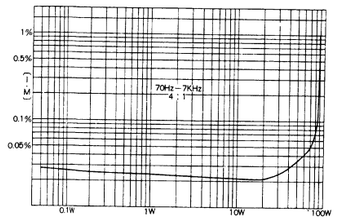
Q1 ~ Q4 ..... 2SC1000
Q5 ~ Q16 ..... 2SC1000
Q17 ~ Q18 ..... 2SC1000
Q19 ~ Q24 ..... 2SC1000
Q25..Q26 ..... 2SC1000
Q27 ~ Q30 ..... 2SC1000
Q31..Q32 ..... 2SC1000
Q33..Q34 ..... 2SC1000
Q35..Q36 ..... 2SC1000
Q37..Q38 ..... 2SC1000
Q39..Q40 ..... 2SC1000
Q41..Q42 ..... 2SC1000
Q43 ~ Q46 ..... KA-495C
Q47 ~ Q58 ..... 2SC959
Q51..Q52 ..... 2SC959
Q53..Q54 ..... 2SA606
Q55..Q56 ..... 2SD218
Q57..Q58 ..... 2SA649
Q59 ..... 2SC1000

D1..D2 ..... 1S1850
D3 ~ D8 ..... UO-5
D7..D8 ..... SV-03
D9..D10 ..... SV-03
D11 ~ D14 ..... DS-38

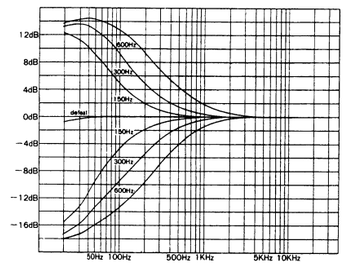
Frequency Response



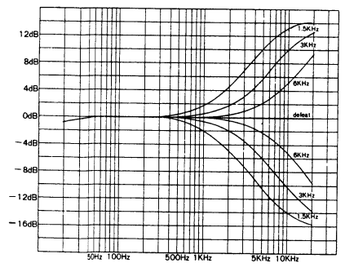
Intermodulation Distortion in Power Amplifier Section (8Ω load)



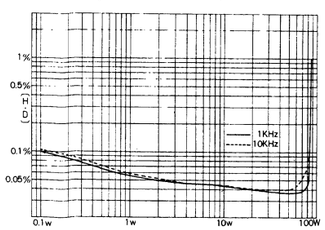
Bass Tone Control



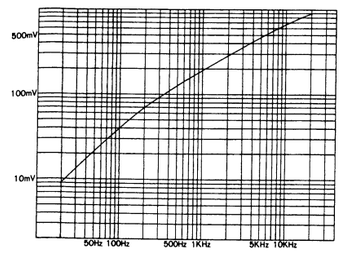
Treble Tone Control



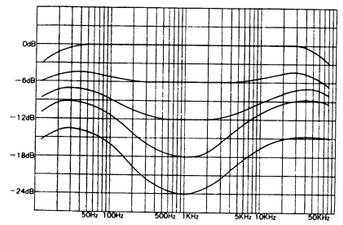
Total Harmonic Distortion in Power Amplifier Section (8Ω load)



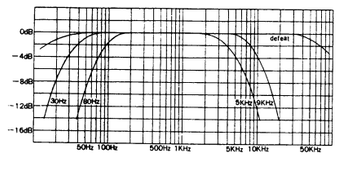
Phono Withstand Input Voltage



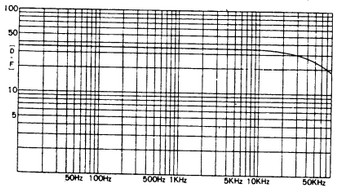
Loudness Control



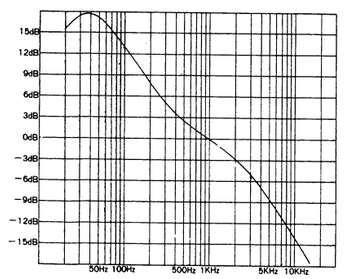
Filter



Damping Factor (8Ω load 2W output)



Equalizer (RIAA)



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